– Environmental Streamlining
The New Mexico State Route 44 Project

The New Mexico State Route 44 project management team, consisting of the FHWA, the New Mexico State Highway and Transportation Department (NMSHTD), and their developer Mesa, PDC were challenged with reconstructing and widening a 118-mile stretch of the corridor in three years, instead of the NMSHTD's originally-projected 27 years. At the same time, the project management team had set far-reaching environmental goals for itself in order to preserve and enhance the beauty of the area.

Therefore, the team would need to develop programs for the project that would not only enhance the project speed, but minimize the impact on the area as well. The team found they could achieve this by proactively addressing the nesting birds and birds of prey and endangered plant species, re-using the 1.5 million tons of Reclaimed Asphalt Pavement (RAP), and developing an environmental workbook for the constructors that would double as a checklist.

Paying Special Attention to the Nesting Birds and Birds of Prey

The Workbook included the requirements for the constructors to check the existing and new drainage structures for birds' nests before they open a new area of construction activity. As a proactive measure, the environmental consultant from Marron and Associates literally walked the entire 118 miles of the project at the onset of the project and identified all migratory bird nests. In the winters of 1998-1999 and 1999-2000 all of the approximately 800 culverts (swallow nest sites) in the project area were re-inspected and any birds' nests that had been established during the past season were removed. Throughout the 1998-1999 nesting season (March-August), and ongoing since March of 2000, all of the known nesting sites in the project area were revisited every five days and newly constructed nests were removed. This eliminated the risk of the birds successfully completing a nest and laying eggs during the construction period.

For the same reason of nest reestablishment, the project has retained "Hawks Aloft" to ensure that no birds of prey have started to establish nests where the construction activities might cause the abandonment of nests with eggs or hatchlings.

Because of the proactive measures taken before the constructors began construction along the entire corridor, the management team believes they have mitigated the danger of lower reproduction of the birds within the construction zones. Further, they also believe the birds will find the completed drainage system and highway as accommodating as before construction began.

Relocation of Endangered Plant Species

During some early biological surveys, the environmental team had found some endangered species of cactus. The plants were immediately relocated to an area that would not be disturbed, before surveyors, geologists, and constructors entered the potential work sites.

Complete Use of Reclaimed Asphalt Pavement (RAP)

Early in the project design the team decided that the estimated 1.5 million tons of asphalt pavement that would be produced from milling should be "recycled" into the reconstructed highway. This was quite a challenge considering the fast track schedule and the construction staging required to maintain traffic through the corridor.
By recycling the RAP, the project team expects the need for the following resources to be reduced:

- The amount of "virgin" highway materials extracted from new sources
- The expenditure of fuels for excavation of aggregate and borrow materials
- The amount of aggregate and borrow materials required from outside the right-of-way, thereby also reducing the impact to the surrounding terrain
- The hauling requirements, thereby reducing the construction impact on the driving public and local residents during construction

The team designed the project so the RAP (milled and screened) could be used as select fill, aggregate base, shoulders, hot mix asphalt, and turnouts. Each constructor was given the option of how to most competitively makes use of the RAP for his work. According to the most recent information, there will be no surplus RAP for the project; the entire existing pavement will be recycled into the reconstructed pavement.

Development of Environmental Workbook for Constructors

Project management thought bidders should be provided as much environmental information as possible for preparing their bids. The team believed that a more informed constructor would be more conscientious of the environment during construction. The information needed to be presented in a way that would be easily understood and convenient to use. The Project team decided to prepare a "workbook" which would be included in the bid packages (and ultimately included in the construction contracts).

The Environmental Workbook is divided to correspond to the eight (8) original highway design sections. Within each of these sections is a matrix that states the commitments and compliance that are applicable to that particular design section. This was also helpful as a reference for the designers throughout the final design process. Each matrix also states, by mile marker, the action required during construction. After award of the construction contracts, the Workbook was used as a checklist for both the constructor and the construction management team to ensure that all of the Project's environmental commitments were met during the actual construction.